3.27 BF/CF

TIMBER MANAGEMENT PLAN

SANTA FE NATIONAL FOREST

JULY 1975

EFFECTIVE PERIOD F.Y. 1975 THROUGH F.Y. 1979

SANTA FE NATIONAL FOREST

SOUTHWESTERN REGION

7/1/75 - 9/30/79

Prepared by: Robert L. Steinhoff 4-25-75
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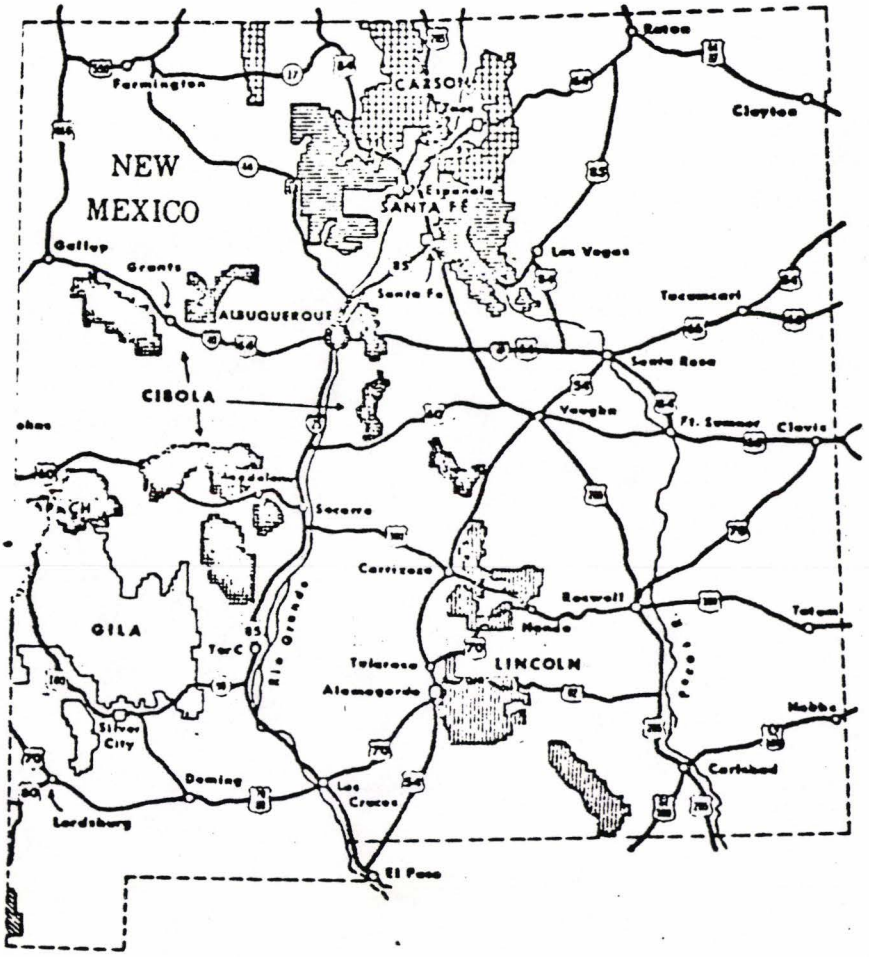

SANTA FE NATIONAL FOREST

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INTRODUCTION

The Santa Fe National Forest is located in north central New Mexico. The Forest includes parts of Los Alamos, Mora, Rio Arriba, Sandoval, San Miguel, and Santa Fe counties, and has its headquarters in Santa Fe, the State Capitol. The Forest is divided into seven Ranger Districts: Coyote, Cuba, Jemez, Las Vegas, Pecos, Tesuque, and Espanola. All seven Ranger Districts include commercial timber lands.

The total net National Forest acreage is 1,580,704 acres.[1/] This includes 758,800 acres of commercial forest land: 372,100 acres in the Standard Component, 61,300 acres in the Special Component, 317,500 acres in the Marginal Component, and 7,900 acres in the Unregulated Component. The potential yields and programmed harvests associated with these components are not interchangeable.

This plan will cover the period from July 1, 1975 through September 30, 1979 as contrasted to the July 1, 1974 through June 30, 1977 date shown in the Final Environmental Statement. This change is necessary because of the extended period needed to produce the environmental statements and an unavoidable two year delay for planned completion of the new inventory. The effective date for the ten year revision of this plan is October 1, 1979. The plan provides for a potential yield from the Standard and Special Components of 41 MMBF of sawtimber per year, and an unestimated amount of miscellaneous forest products such as fuelwood, posts, poles, and Christmas trees.

The environmental impacts and mitigation of these impacts were discussed in the Final Environmental Statement for a Proposed Timber Management Plan, Santa Fe National Forest, which was transmitted to the Council on Environmental Quality on September 9, 1974. That Final Statement is a separate document which is considered as part of this Timber Management Plan. The Final Environmental Statement must be consulted in administering this management plan.

The objective of timber management on the Santa Fe National Forest is to attain and provide the full potential yield on an even-flow sustained yield basis under the principle of multiple use. During this three-year plan period it is the objective of management to reforest 4620 acres of nonstocked forest and to accomplish 18,100 acres of precommercial thinning in overstocked young stands.

1/ National Forest System areas as of June 30, 1973.

USDA – Forest Service

STANDARD TIMBERLAND USE CLASSIFICATION

DATE: __/__/__

(1-2) REGION NO.	(3-4) FOREST NO.	(5-6) SUBUNIT NO.	(7-8) STATE NO.	(9) CLASS 1 OR 2	EFFECTIVE FY START	PERIOD BASIS END
03	10	__	35	1&2	1976 (10-13)	1979 (14-17)

	LAND CLASS CODE (18-19)	AREAS M ACRES (20-26)	VOLUME [1] M CUNITS (27-34)	VOLUME [1] MMBF (35-42)	TOTAL ANNUAL GROWTH M CUNITS (43-50)	TOTAL ANNUAL GROWTH MMBF (51-58)
NET NATIONAL FOREST OWNERSHIP						
WATER	10	0.0				
NON-FOREST	20	105.6				
PRODUCTIVE RESERVED	30	135.2				
PRODUCTIVE DEFERRED	40	18.5				
PRODUCTIVE FOREST / COMMERCIAL FOREST / STANDARD COMPONENT	50	372.1	5096.6	1967.8	84.6	31.6
SPECIAL COMPONENT	60	61.3	973.3	375.4	16.2	6.1
Travel Influence Zone	61	11.2				
Water Influence Zone	62	5.5				
Special Management Units		33.8				
Los Alamos Unit		10.8				
MARGINAL COMPONENT	70	317.5	4108.3	1471.9	81.1	26.2
Reforestation Backlog	71					
TSI Backlog	72					
Access Road	73					
Inaccessible		164.9	2189.0	782.4	38.4	11.8
Other		115.0	1394.5	518.0	23.9	8.1
Aspen		37.6	524.8	171.5	18.8	6.3
UNREGULATED COMPONENT	80	7.9				
UNPRODUCTIVE FOREST	90	562.6				
NET NATIONAL FOREST TOTALS	99	1580.7	10177.2	3815.1	181.9	63.9

TSI Backlog 75.0

Reforestation Backlog 12.2

[1] ___ of the volume from class ___ areas (59-60) (61)

GPO 865-184 2400-26a (5-73)

USDA – Forest Service

STANDARD TIMBERLAND USE CLASSIFICATION

DATE: __/__/__

(1-2) REGION NO.	(3-4) FOREST NO.	(5-6) SUBUNIT NO.	(7-8) STATE NO.	(9) CLASS 1 OR 2	EFFECTIVE FY START (10-13)	PERIOD BASIS END (14-17)
03	10	__	35	1&2	1976	1979

NET NATIONAL FOREST OWNERSHIP

	LAND CLASS CODE (18-19)	AREAS M ACRES (20-26)	VOLUME [1] M CUNITS (27-34)	VOLUME [1] MMBF (35-42)	TOTAL ANNUAL GROWTH M CUNITS (43-50)	TOTAL ANNUAL GROWTH MMBF (51-58)
WATER	10	0.0				
NON-FOREST	20	105.6				
PRODUCTIVE RESERVED	30	135.2				
PRODUCTIVE DEFERRED	40	18.5				
PRODUCTIVE FOREST / COMMERCIAL FOREST / STANDARD COMPONENT	50	372.1	5096.6	1967.8	84.6	31.6
SPECIAL COMPONENT	60	61.3	973.3	375.4	16.2	6.1
Travel Influence Zone	61	11.2				
Water Influence Zone	62	5.5				
Special Management Units		33.8				
Los Alamos Unit		10.8				
MARGINAL COMPONENT	70	317.5	4108.3	1471.9	81.1	26.2
Reforestation Backlog	71					
TSI Backlog	72					
Access Road	73					
Inaccessible		164.9	2189.0	782.4	38.4	11.8
Other		115.0	1394.5	518.0	23.9	8.1
Aspen		37.6	524.8	171.5	18.8	6.3
UNREGULATED COMPONENT	80	7.9				
UNPRODUCTIVE FOREST	90	562.6				
NET NATIONAL FOREST TOTALS	99	1580.7	10177.2	3815.1	181.9	63.9

__ __ of the volume from class __ areas (61)

TSI Backlog	75.0
Reforestation Backlog	12.2

53-60

GPO 865-184 2400-26a (5-73)

USDA – Forest Service

STANDARD TIMBERLAND USE CLASSIFICATION

DATE: __/__/__

(1-2) REGION NO.	(3-4) FOREST NO.	(5-6) SUBUNIT NO.	(7-8) STATE NO.	(9) CLASS 1 OR 2	EFFECTIVE FY START (10-13)	PERIOD BASIS END (14-17)
0 3	1 0	__	3 5	1	1976	1979

NET NATIONAL FOREST OWNERSHIP

FOREST

PRODUCTIVE FOREST

COMMERCIAL FOREST

	LAND CLASS CODE (18-19)	AREAS M ACRES (20-26)	VOLUME [1] M CUNITS (27-34)	VOLUME [1] MMBF (35-42)	TOTAL ANNUAL GROWTH M CUNITS (43-50)	TOTAL ANNUAL GROWTH MMBF (51-58)
WATER	10	0.0				
NON-FOREST	20	105.6				
PRODUCTIVE RESERVED	30	135.2				
PRODUCTIVE DEFERRED	40	18.5				
STANDARD COMPONENT	50	372.1	5096.6	1967.8	84.6	31.6
SPECIAL COMPONENT	60	61.3	972.3	375.4	16.2	6.1
Travel Influence Zone	61	11.2				
Water Influence Zone	62	5.5				
Special Management Units		33.8				
Los Alamos Unit		10.8				
MARGINAL COMPONENT	70	279.9	3583.5	1300.4	62.3	19.9
Reforestation Backlog	71					
TSI Backlog	72					
Access Road	73					
Inaccessible		164.9	2189.0	782.4	38.4	11.8
Other		115.0	1394.5	518.0	23.9	8.1
UNREGULATED COMPONENT	80	7.9				
UNPRODUCTIVE FOREST	90	562.6				
NET NATIONAL FOREST TOTALS	99	1543.1	9652.4	3643.6	163.1	57.6

[1] __ % of the volume from class __ areas (59-60) (61)

TSI Backlog	75.0
Reforestation Backlog	12.2

2400-26a (5/73)

USDA – Forest Service

STANDARD TIMBERLAND USE CLASSIFICATION

DATE: __/__/__

(1-2) REGION NO.	(3-4) FOREST NO.	(5-6) SUBUNIT NO.	(7-8) STATE NO.	(9) CLASS 1 OR 2	EFFECTIVE FY START	PERIOD BASIS END
03	10		35	2	1976 (10-13)	1979 (14-17)

NET NATIONAL FOREST OWNERSHIP

FOREST

PRODUCTIVE FOREST

COMMERCIAL FOREST

	LAND CLASS CODE (18-19)	AREAS M ACRES (20-26)	VOLUME [1] M CUNITS (27-34)	VOLUME [1] MMBF (35-42)	TOTAL ANNUAL GROWTH M CUNITS (43-50)	TOTAL ANNUAL GROWTH MMBF (51-58)
WATER	10					
NON-FOREST	20					
PRODUCTIVE RESERVED	30					
PRODUCTIVE DEFERRED	40					
STANDARD COMPONENT	50					
	--					
	--					
	--					
	--					
	--					
	--					
	--					
SPECIAL COMPONENT	60					
Travel Influence Zone	61					
Water Influence Zone	62					
	--					
	--					
	--					
	--					
	--					
	--					
MARGINAL COMPONENT	70	37.6	524.8	171.5	18.8	6.3
Reforestation Backlog	71					
TSI Backlog	72					
Access Road	73					
Aspen	--	37.6	524.8	171.5	18.8	6.3
	--					
	--					
	--					
UNREGULATED COMPONENT	80					
	--					
	--					
	--					
	--					
	--					
UNPRODUCTIVE FOREST	90					
NET NATIONAL FOREST TOTALS	99	37.6	524.8	171.5	18.8	6.3

[1] __% of the volume from class __ areas (59-60) (61)

GPO 865-184 2400-26a (5/73)

USDA - Forest Service

POTENTIAL YIELD OR PROGRAMED ALLOWABLE HARVEST STATEMENT

(Instructions : FSM 2491)

X Potential Yield ☐ Programed Allowable Harvest

REGION NO	FOREST NO	SUB UNIT NO	STATE NO	CLASS 1 OR 2	WORK GROUP	LAND CLASS CODE	ACTIVITY CODE	AREA M ACRES	SAWTIMBER		PRODUCTS	
									M CUNITS	MMBF	M CUNITS	M CORDS
03	10	--	35	1&2	--							
(1-2)	(3-4)	(5-6)	(7-8)	(9)	(10-11)	(12-13)	(14-16)	(17-23)	(24-30)	(31-37)	(38-44)	(45-51)
STANDARD COMPONENT	PATCH, STRIP, STAND					50	110					
	SHELTERWOOD-SEED TREE											
	Seed Cuts					50	130	7.0	66.6	35.9	13.6	16.5
	Removels (overstory)					50	140	25.4	176.1	94.6	36.0	43.9
	SELECTION					50	150					
	INTERMEDIATE					50	200	12.5	35.0	18.8	7.2	8.8
						5_						
						5_						
						5_						
						5_						
						5_						
						5_						
						5_						
						5_						
						5_						
						5_						
						5_						
	STANDARD TOTAL					50		44.9	277.7	149.3	56.8	69.2
SPECIAL						6_						
						6_						
						6_						
						6_						
						6_						
						6_						
	SPECIAL TOTAL					60		19.8	27.5	14.8	5.6	6.8
MARGINAL	REFORESTATION BACKLOG[1]					71						
	TSI BACKLOG[2]					72						
	Access Road					73						
	Aspen					7_	111	1.9	26.2	8.5	3.3	4.0
	Inaccess and Other					7_	131	9.3	88.1	47.4		
	Inaccess and Other					7_	220	46.6	254.9	137.1	70.1	85.5
						7_						
	MARGINAL TOTAL					70		57.8	369.2	193.0	73.4	89.5
UNREGULATED TOTAL						80						
Potential or Programed TOTAL						99		122.5	674.4	357.1	135.8	165.5

EFFECTIVE PERIOD FY BASIS	
START (58-59)	END (60-63)
1976	1979

REMARKS: [1] Increases are earned at the rate of ___ (64-66) (1. Bd. ft. / 2. Cu. ft.) * per acre per year for each acre reforested since plan revision and will be harvested from standard areas.

[2] Increases are earned at the rate of ___ (68-70) (1. Bd. ft. / 2. Cu. ft.) * for each acre accomplished previous fiscal year and will be harvested from standard areas.

*Cross out cu. ft. or Bd. ft.

APPROVED BY:	TITLE:	DATE:

USDA - Forest Service

POTENTIAL YIELD OR PROGRAMED ALLOWABLE HARVEST STATEMENT

(Instructions : FSM 2491)

☐ Potential Yield ☒ Programed Allowable Harvest

REGION NO	FOREST NO	SUB UNIT NO	STATE NO	CLASS 1 OR 2	WORK GROUP	LAND CLASS CODE	ACTIVITY CODE	AREA M ACRES	SAWTIMBER M CUNITS	SAWTIMBER MMBF	PRODUCTS M CUNITS	PRODUCTS M CORDS
03	10	--	35	1&2	--							
(1-2)	(3-4)	(5-6)	(7-8)	(9)	(10-11)	12-13	14-16	17-23	24-30	31-37	38-44	45-51
STANDARD COMPONENT	PATCH, STRIP, STAND					50	110	------	------	------	------	------
	SHELTERWOOD-SEED TREE											
	Seed Cuts					50	130	1.7	16.7	9.0	------	------
	Removals (overstory)					50	140	64	439	236	------	------
	SELECTION					50	150	------	------	------	------	------
	INTERMEDIATE					50	200	31	8.7	4.7	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
						5_	---	------	------	------	------	------
	STANDARD TOTAL					50		112	693	373	------	------
SPECIAL						6_	---	------	------	------	------	------
						6_	---	------	------	------	------	------
						6_	---	------	------	------	------	------
						6_	---	------	------	------	------	------
						6_	---	------	------	------	------	------
						6_	---	------	------	------	------	------
	SPECIAL TOTAL					60		5.0	9.3	3.7	------	------
MARGINAL	REFORESTATION BACKLOG[1]					71		------	------	------	------	------
	TSI BACKLOG [2]					72		------	------	------	------	------
	ACCESS ROAD					73		------	------	------	------	------
						7_	---	------	------	------	------	------
						7_	---	------	------	------	------	------
						7_	---	------	------	------	------	------
						7_	---	------	------	------	------	------
	MARGINAL TOTAL					70		------	------	------	------	------
UNREGULATED TOTAL						80		------	------	------	------	------
Potential or Programed TOTAL						99		16.2	78.6	41.0	------	------

EFFECTIVE PERIOD FY BASIS	
START (56-59)	END (60-63)
1976	1976

one year

REMARKS: [1] Increases are earned at the rate of ___ (64-66) (1. Bd. ft. / 2. Cu. ft.) * per acre per year for each acre reforested since plan revision and will be harvested from standard areas.

[2] Increases are earned at the rate of ___ (68-70) (1. Bd. ft. / 2. Cu. ft.) * for each acre accomplished previous fiscal yes and will be harvested from standard areas.

*Cross out cu. ft. or Bd. ft.

APPROVED BY:	TITLE:	DATE:

2400-26b (5/73)

HISTORY

The area presently occupied by the Santa Fe National Forest has been utilized by Spanish settlers since the early 1500's and by Indian occupants before that date. Heavy grazing by cattle and sheep began in the early 1800's and a common practice was to burn over large areas of the Forest to reduce timber competition and increase the growth of forage. Many areas of the Forest still show evidence of these old fires, and some areas which formerly supported timber stands are still covered with oak-brush.

Timber resources from the Forest have been utilized to some extent for hundreds of years, but heavy timber cutting began on the eastern part of the Forest about 1878 when the AT&SF Railroad was under construction. Heavy cutting on the western part of the Forest began about 1918 when the New Mexico Lumber Company began logging in the Mud Springs area.

The Santa Fe National Forest was established in 1905, and since that time timber cutting has been under the supervision of the Forest Service. During this time more than a billion board feet of sawtimber has been cut from the Forest. The timber harvest by periods has been as follows:

Period	Timber Cut (MMBF)
Prior to 1931	78
1931 - 1940	108
1941 - 1950	237
1951 - 1960	226
1961 - 1970	419
1971 - 1974	181
Total	1,249

There has been no market for pulpwood on the Forest, and harvesting of cordwood has been primarily for local use of fuelwood. In recent years approximately 1,000 MBF (2,000 cords) per year has been sold in small sales for fuelwood, vigas, poles, and posts. In addition approximately 4,000 MBF (8,000 cords) per year has been given free for personal use as fuelwood to local residents. The free fuelwood is largely dead pinyon and juniper wood from range improvement areas and cull material left in sawtimber sale areas. Since the beginning of the general fuel shortage in 1973 the cutting of wood for fuel has increased to at least double the previous level.

Christmas trees and forest-grown wildings are harvested from the Forest at an average rate of about 20,000 trees per year.

Reforestation of nonstocked and inadequately stocked timberland is an active program on the Forest. The current backlog of 12,240 acres in need of reforestation is being planted at the rate of 1500 acres per year. About 80% of the reforestation backlog and current planting program is reforestation of the large Cebollita and Cat fires which occurred in 1971

Precommercial thinning of overly-dense young stands has been accomplished at the average rate of about 4,000 acres per year in recent years. This program is currently being increased to 6,000 acres per year. At the present time there is a backlog of 75,000 acres of young stands in need of precommercial thinning.

Timber resources and timber management activities are broadly spread across the entire Forest. All seven Ranger Districts are involved in the harvesting of sawtimber, cordwood, and Christmas trees, and all seven Ranger Districts are likewise involved in the reforestation and precommercial thinning programs.

INVENTORY PROCEDURES AND STATISTICAL ANALYSIS

PROCEDURE:

The field measurements for the inventory were completed in 1965.

Inventory data for volume, growth, and mortality for timber stands other than in the Los Alamos area are based on measurements from 296 10-point variable radius cluster plots. The 296 clusters were randomly selected from a larger series of 1/4 acre circular plots which had been installed on the Forest in the mid 1950's. Trees 5" DBH and larger were selected for measurement at each of the 10 points within a cluster by use of a 40 basal area factor prism. Trees less than 5" DBH were tallied on a 1/300 acre plot at each of the 10 points within a cluster. Actual field procedures are detailed in an instruction manual, a copy of which is on file at the office of the Timber Management Staff Unit in the Regional Office.

The Los Alamos area, which includes 13,000 acres of productive forest land, was inventoried separately in 1963-1964. Volume and acreage data from this inventory were added to the data from the larger inventory as the basis for this plan. For the Los Alamos area 96 plots were measured. Each plot consisted of a 1/4 acre plot and a 10-point cluster.

STATISTICAL ANALYSIS - EXTENSIVE TIMBER INVENTORY

	BOARD FOOT SCRIBNER TREES 9" + DBH VARIABLE TOP LIMIT	CUBIC FOOT TREES 5" + DBH TO 4" DBH TOP
Number of Plots	296	296
Sum of X	1,885,613	480,953
Sum of X^2	22,371,513,097	1,240,096,820
Mean	6,370	1,625
Standard Deviation	5,916	1,245
Standard Error	344	72
Percent Error	5.40	4.45
Coefficient of Variation	92.87	76.61
Plots Needed for $\pm$ 10%	87	59

STATISTICAL ANALYSIS FOR LOS ALAMOS INVENTORY

Number of Plots	96
Mean	3,745
Standard Deviation	2,829
Standard Error	289
Percent Error	7.72
Coefficient of Variation	75.55
Plots Needed for $\pm$ 10%	57

As shown by the preceeding statistical analysis, the sample or number of plots taken is well within the allowable range of ± 10% error. The percent error for board foot volume is between 5.4% and 7.72% and the cubic foot volume error is 4.45% at the 67% confidence level.

COMPARISON WITH PREVIOUS PLANS

This plan places the entire Santa Fe National Forest into one working circle, with a single timber management plan. Previously the Forest was divided into seven smaller working circles, each with its own timber management plan. These seven working circles did not coincide with the seven Ranger Districts. Below is a comparison of data developed for this plan with a combination of data from the seven previous working circle plans:

	Previous Plans 1/	Present Plan Inventory
Total Net National Forest Acres	1,466,700	1,580,700
Commercial Forest Acres	724,500	758,800
Productive Reserved Acres	135,200	135,200
Productive Deferred Acres	18,500	18,500
Acres by Stand Size		
1. Pine Sawtimber		300,599
2. Pine Poles		84,083
3. Pine Seedlings and Saplings		31,619
4. Mixed Conifer Sawtimber		171,356
5. Mixed Conifer Poles		47,571
6. Mixed Conifer Seedlings & Saplings		17,866
7. Spruce-Fir Sawtimber		40,340
8. Spruce-Fir Poles		11,272
9. Spruce-Fir Seedlings & Saplings		4,254
10. Aspen		37,600
11. Nonstocked		12,240

COMPARISON WITH PREVIOUS PLANS

	Previous Plans [1]	Present Plan Inventory
Areas by R-3 Site Class		
1. Site Class I		110,287
2. Site Class II		362,578
3. Site Class III		285,935
Total Cubic Foot Volume (MCF)	844,189 [2]	1,017,720
Total Board Foot Volume (MBF)	3,054,200	3,815,100
Cubic Foot Annual Growth (MCF)	16,806	18,190
Board Foot Annual Growth (MBF)	60,500 [2]	63,900

1/ Previous plans per Standard Timberland Use Classification updated to 7-15-73.

2/ Restated to include cubic volume to 4" top, to compare with present plan.

ACCOMPLISHMENTS

Timber Harvest

The combined annual allowable cut of sawtimber for the seven working circle plans was 46,100 M board feet. These plans have been in effect for periods varying from 9 years to 16 years, and the average sawtimber cut from the Forest for the past 10 years has been 46,088 M board feet.

The harvest of small roundwood products from the Forest for the past 10 years has averaged 2,350 cords per year, mostly in the form of pinyon and juniper fuelwood. The previous plans did not calculate an allowable cut for this small material, but the potential yield from the standard and special components in this plan is 19,000 cords per year. The small roundwood resource has been underutilized in the past and will probably continue to be underutilized until a market for pulpwood develops on the Forest.

Reforestation

Four of the previous plans called for a total of 878 acres of reforestation work each year, and the other three plans provided only that reforestation would be done according to Regional instructions. Through Fiscal Year 1974, a total of 649 acres have been direct seeded and 5,387 acres have been planted.

Since 1971 reforestation by planting has been accelerated to reforest the two large burn areas (Cebollita and Cat burns) which occurred that year. Planting for the last three years has been at an average rate of 1,444 acres per year.

Survival checks for the last two years indicate an average survival rate of 66% for Fiscal Year 1973 plantings and 41% for Fiscal Year 1974.

Timber Stand Improvement

Four of the previous plans called for a total of 1,507 acres of precommercial thinning per year in overstocked young timber stands, and the other three plans provided that timber stand improvement work would be done as prescribed according to Regional instructions.

Timber stand improvement work has been done on the Forest beginning in the 1930's. Through Fiscal Year 1961 most of the work was pruning, and 39,256 acres were treated. Precommercial thinning became the primary cultural treatment in Fiscal Year 1962, and 48,312 acres were thinned through Fiscal Year 1974, an average of 3,716 acres per year.

SILVICULTURAL OBJECTIVES

Standard Component

This component consists of 372,100 acres of timberlands which are to be intensively managed with sustained yield of sawtimber as a primary objective. Even-aged management will be practiced using the shelterwood cutting method for ponderosa pine and mixed conifer stands. In the spruce type no new timber sales will be included in the programmed cut. Unusually heavy cutting in the past five years in this type because of large scale insect epidemic and windthrow have resulted in removing a volume of spruce timber, since the inventory was made, in excess of the calculated potential yield for the spruce type for a 10-year period. For this reason, any cutting in the spruce type will not be on a programmed harvest basis, but will be done only in stands where cutting is urgently needed because of fire, windthrow, insect infestations, or other urgent silvicultural reasons for cutting to safeguard the health of the subject stand or adjacent stands. A minor amount of cutting will be done in spruce-fir and aspen stands and in these stands a variety of cutting methods may be utilized, depending on the silvicultural prescription for the individual stand. Current Region 3 guidelines for cutting in these stands will be utilized in prescribing cutting methods.

The shelterwood cutting method proposed will involve three types of cutting; regeneration, removal, and intermediate.

Regeneration cutting is for the purpose of establishing a new stand that will gradually replace the present stand. During part of the rotation the old stand provides some shelter for the new stand. Regeneration cutting normally involves two steps, preparatory cutting and seed cutting. The preparatory cutting developes thrifty seed bearing trees and opens the stand to approximately 50 percent sunlight at ground level. If this condition already exists in the stand, preparatory cutting is not necessary. The seed cutting opens the stand to approximately 60 - 75 percent sunlight at ground level and is not necessary if satisfactory seedling establishment exists or occurred from a preparatory cutting. For this plan period approximately 1758 acres per year will receive a preparatory or seed cutting in order to regenerate the stand.

Much of the Standard Component on the Santa Fe National Forest is fully stocked with advance regeneration at the present time and still has a part of the old stand as an overstory. Removal cutting will be practiced on approximately 6,359 acres per year. The purpose of removal cutting is to gradually uncover the new crop. In intensive management several removal cuttings can be made, the last of which is called the final removal cutting.

Intermediate cutting is any cutting that removes trees from a stand between the time of its establishment and the start of regeneration cutting. Intermediate cuttings are for the purpose of improving growth and vigor in the stand and may include thinning, cleaning, improvement, and salvage cutting. The emphasis in intermediate cutting will be to enter stands at 20-year intervals to remove trees of poor risk, poor form, and others as needed to achieve proper spacing and stocking to assure optimum growing conditions for the ensuing 20 year period. Intermediate cutting will be done on approximately 3,100 acres per year.

Salvage of dead and dying trees will be emphasized in all types of cutting. The 1968 inventory estimated that 22 million board feet of sawtimber trees die each year. To put this rather large volume in perspective, it represents .6 of 1% of the standing sawtimber volume in the Forest. It is an objective of this plan to salvage as much of the volume from these dying trees as is practicable through removal of dead, dying, and high risk trees in all regeneration and intermediate cuttings, and by making special salvage sales of this material when it is sufficiently concentrated to make such sales practicable. The volume of mortality is expected to decrease substantially as the over-mature overstory remnants are harvested and replaced by younger, more vigorous trees.

Special Component

This component contains 61,300 acres of productive forest land in Travel Influence Zones, Water Influence Zones, Special Management Units, and the Los Alamos Unit. The objective of timber harvesting in this component is the enhancement of landscape values or other key resource values to be emphasized in the specific unit.

Cutting methods prescribed for stands in this component will be either a selection system or the irregular shelterwood method. Selection systems provide for maintaining uneven-aged stands, and the irregular shelterwood system specifies a long period of regenerating the stand so that part of the overstory is retained over most or all of the new rotation period and provides an all-aged appearance. Intermediate and salvage cutting will be prescribed as needed in these stands. Light intermediate cuttings will be made on approximately 5,000 acres per year in this component during the plan period.

Marginal Component

This component includes 317,500 acres of productive forest lands, mostly areas which are inaccessible or not operable with present logging systems in use in this area. It also includes aspen stands which are not in the special units and zones of the special component. No programmed allowable harvest is planned for this component, but cutting may be done with improved logging systems which afford adequate protection to soils and other resources.

SYSTEM OF CONTROL

Regulation of timber to be cut under this plan is by volume with an estimate of the area to be treated. Programmed harvest may vary from year to year, but total volume for the plan period is to be within 10% of the programmed allowable harvest.

The control of acres to be harvested by both regeneration and intermediate cutting will be developed by compartment examination and cutting prescriptions based on stand conditions. Areas suitable for regeneration cutting and for intermediate cutting will be identified through compartment examination, prescribed for appropriate cutting methods, and subjected to environmental analysis prior to being marked for cutting and included in a timber sale. It is estimated that in the Standard and Special Components an average of 8100 acres per year will receive a harvest cutting (preparatory, seed, or removal) and an additional 8100 acres per year will receive an intermediate cutting. No cutting is programmed for the Marginal Component, but volume in this component is available for harvest with appropriate contractual requirements and logging methods which will afford adequate protection to the environment.

The record of accomplishments in timber cutting, timber stand improvement, and reforestation will be kept in the Compartment files by ranger districts.

LONG TERM POTENTIAL YIELD PROJECTION

A long term potential yield projection for the 372,100 acres in the Standard Component as developed using the Timber Resource Allocation Model (RAM) computer program is shown in Figure 1. This program is designed to optimize production during the conversion period to obtain even-aged management.

Criteria

1. The period for conversion to even-aged management is planned for 1-1/2 rotations or 18 decades.

2. The present acreage of timber types and age classes is the control from which acres of treatment were developed.

3. The potential yield for this management plan for the Standard Component is the starting point for projecting future harvest.

4. The input volume per acre was based on inventory data and knowledgeable estimates for average timber sites.

5. A constraint prohibiting a reduction of yield between decades in the conversion period was imposed on the projection.

Results

1. Yield is projected as stable for the first 6 decades of the conversion period.

2. A large increase in yield of approximately 48% is projected for the 7th decade. Further increases are projected until a maximum is reached in the 14th decade.

3. A projected 11% reduction in yield occurs in the 19th decade at the beginning of the post-conversion period.

4. The conversion period average yield is about 57 MMBF per year.

5. The post conversion period average yield is about 68 MMBF per year.

6. The projection results indicate that under the planned management, the potential yield will increase substantially over the present level.

LONG TERM POTENTIAL YIELD PROJECTION BY DECADES FOR STANDARD COMPONENT

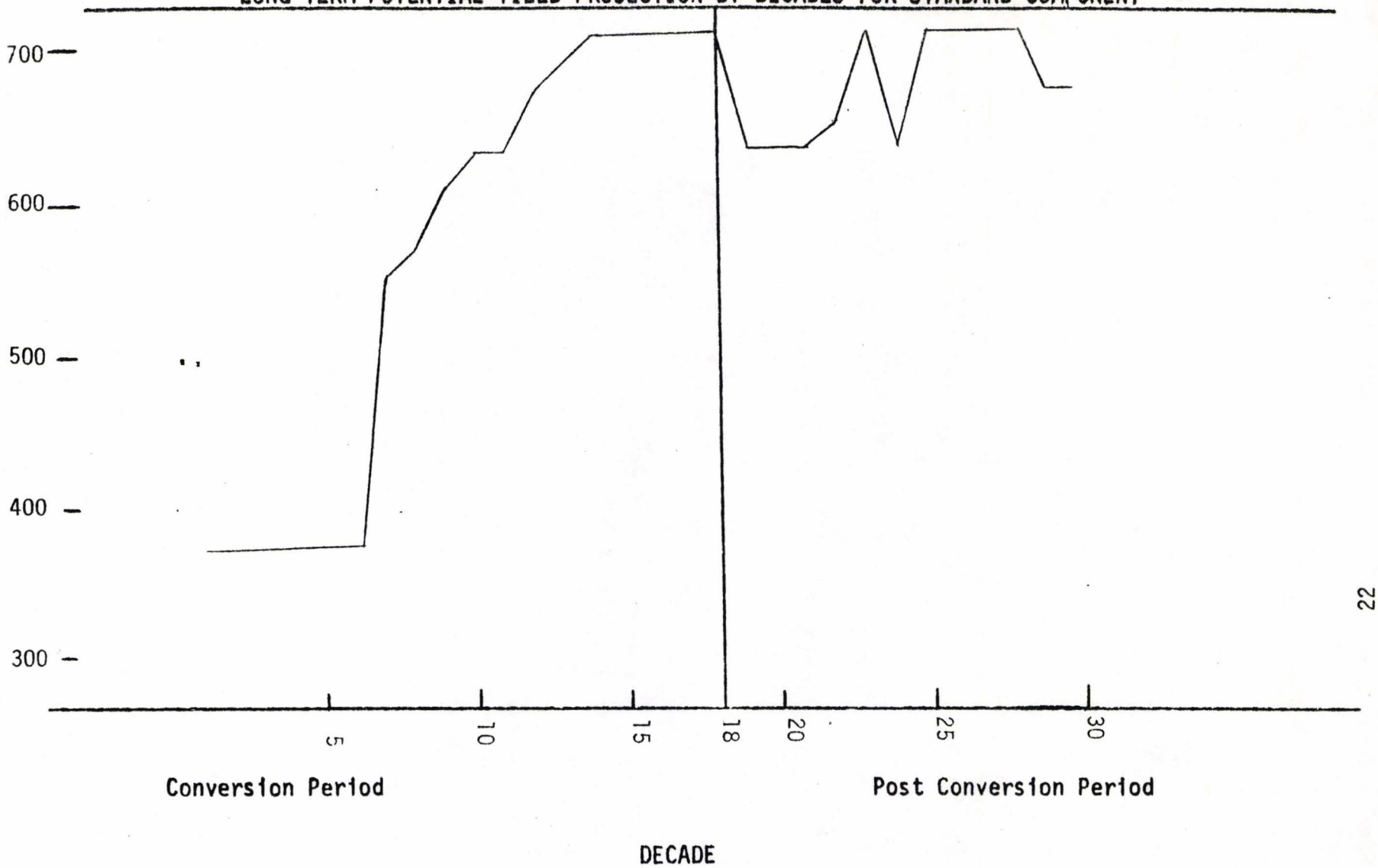


FIGURE I

LONG TERM POTENTIAL YIELD

Period	OVERSTORY REMOVAL CUTS			INTERMEDIATE CUTS			HARVEST CUTS			TOTAL CUTS		
	Acres	MMBF		Acres	MMBF		Acres	MMBF		ACres	MMBF	
		Periodic	Total		periodic	Total		Periodic	Total		Periodic	Total
1	63586.	236.57	236.57	31237.	47.10	47.10	17587.	89.69	89.69	112410.	373.36	373.36
2	35181.	85.45	322.02	42468.	63.70	110.79	27581.	223.84	313.54	105230.	372.99	746.35
3	17587	35.17	357.19	104729.	174.69	285.49	24735.	162.75	476.29	147051.	372.62	1118.97
4	45496.	71.68	428.87	85120.	117.60	403.09	37705.	182.96	659.25	168380	372.24	1491.21
5	40428.	68.13	497.00	97325.	187.72	590.81	15225.	116.02	775.27	152977.	371.87	1863.08
6	45762.	73.01	570.02	89222.	164.70	755.50	25341.	133.79	909.06	160325.	371.50	2234.58
7	12955.	24.21	594.23	112997.	200.55	956.05	31237.	322.92	1231.98	157189.	547.68	2782.26
8	25341.	38.01	632.24	102442.	189.86	1145.91	22418.	340.99	1572.97	150201.	568.86	3351.12
9	31237.	49.78	682.02	107485.	230.99	1376.90	30247.	332.71	1905.68	168969.	613.49	3964.60
10	13920	27.63	709.66	104966.	192.48	1569.38	35181.	405.97	2311.66	154067.	626.08	4590.69
11	30247.	45.37	755.03	89371.	220.63	1790.01	28763.	373.92	2685.57	148380.	639.92	5230.61
12	35181.	54.16	809.19	101465.	198.28	1988.29	28843.	413.62	3099.19	165488.	666.06	5896.67
13	28763.	57.53	866.71	90781.	195.74	2184.03	31719.	439.06	3538.26	151263.	692.33	6589.00
14	26663.	43.92	910.63	95558.	200.24	2384.27	28325.	460.16	3998.42	150545.	704.32	7293.32
15	19479.	38.96	949.59	93157.	189.22	2573.48	30555.	475.45	4473.86	143191.	703.62	7996.94
16	16796.	25.57	975.16	90998.	183.61	2757.09	39741	495.84	4969.71	147535.	705.02	8701.96
17	26664.	50.24	1025.39	90247.	187.59	2944.68	31673.	466.49	5436.20	148584.	704.31	9406.27
18	39741.	60.97	1086.36	86441.	174.97	3119.65	33399.	467.66	5903.86	159581.	703.61	10109.88
19	29403.	49.08	1135.44	90728.	195.10	3314.75	31237.	392.42	6296.28	151369.	636.60	10746.47
20	33399.	54.13	1189.57	92348.	187.97	3502.73	22418.	394.50	6690.78	148165.	636.60	11383.07
21	31237.	49.78	1239.35	91037.	223.85	3726.58	30247.	362.96	7053.74	152521.	636.60	12019.67
22	13920.	27.63	1266.99	96908.	188.65	3915.23	35181.	430.50	7484.24	146010.	646.78	12666.45
23	30247.	45.37	1312.36	93947.	226.80	4142.03	28763.	431.44	7915.68	152957.	703.61	13370.06
24	35181.	54.16	1366.52	101465.	190.97	4332.99	28843.	391.47	8307.15	165488.	636.60	14006.66
25	28763.	57.53	1424.04	93466.	207.02	4540.01	31719.	439.06	8746.22	153947.	703.61	14710.27
26	26663.	43.92	1467.96	95558.	202.28	4742.29	28325.	457.41	9203.63	150545.	703.61	15413.88
27	19479.	38.96	1506.92	93157.	197.63	4939.92	30555.	467.02	9670.64	143191.	703.61	16117.49
28	16796.	25.57	1532.49	90998.	191.66	5131.59	39741.	485.05	10155.69	147535.	702.28	16819.77
29	26664.	50.24	1582.72	90247.	187.59	5319.17	31673.	432.62	10588.32	148584.	670.44	17490.21
30	39741	60.97	1643.69	86441.	174.97	5494.15	33399.	424.96	11013.28	159581.	660.90	18151.12

POTENTIAL YIELD RATIONALE

The potential yield for the Santa Fe National Forest for this plan period is based on the Timber-RAM computer projection for harvesting in the Standard Component, a calculation using similar volumes for the Marginal Component, and a calculation of yield for the Special Component.

The Standard Component has a potential yield of 37,336 MBF per year. This involves making the following cuts in an average year:

Preparatory or seed cut	1758 Ac. x 5,099 bd.ft./ac. =	8,964 MBF
Removal Cut	6359 Ac. x 3,721 bd.ft./ac. =	23,662 "
Intermediate Cut	3124 Ac. x 1,508 bd.f.t/ac. =	4,710 "
	Total =	37,336 MBF

In the Special Component light intermediate cuts, removing only high risk trees, will be made on 4,953 acres per year.

4953 acres x 747 bd.ft./ac. = 3,700 MBF potential yield

Potential yield for the Marginal Component is calculated based on making regeneration cuts in 1/120 of the coniferous acreage and 1/80 of the aspen acreage each year, and making intermediate cuts on 1/20 of the coniferous acreage which would not receive a regeneration cut within 20 years. Potential yield for the Marginal Component is as follows:

Regeneration cut	2,800 Ac. x 4,988 bd.ft./ac. =	13,967 MBF
Intermediate cut	11,662 Ac. x 2,938 bd.ft./ac. =	34,263 "
	Total =	48,230 MBF potential yield

For small roundwood products (5.0 - 8.9" DBH) the potential yield is calculated as follows:

31,000,000 Cu. Ft. to be cut in 20 years
Potential yield per year = 31,000,000/20 = 1,550,000 Cu. Ft.
yield in cords = 1,550,000/82 = 18,900 cords
- Standard Component = 17,000 cords
- Special Component = 1,900 cords

FULL SUSTAINED-YIELD TIMBER PRODUCTION POTENTIAL

If all of the productive forest land on the Santa Fe National Forest, including lands classified as productive reserved and productive deferred, were designated for optimum timber production, the maximum harvest that could be planned for the next 10 years to achieve the highest perpetual sustained-yield would be as calculated below:

Sawtimber Yield

Assume a 120 year rotation on all 912,500 acres of productive forest land, average volume 5,081 bd. ft./ac. and average growth of 85 bd. ft. per acre per year.

912,500 acres ÷ 120 = 7,604 acres regeneration cut per year

Year

1	7,604 acres x 5081 bd. ft. per acre	=	38.6 MMbf
2	7,604 acres x (5081 bd.ft. + 85 bd.ft. growth)	=	39.3 "
3	7,604 acres x (5166 bd.ft. + 85 bd.ft. growth)	=	39.9 "
4	7,604 acres x (5251 bd.ft. + 85 bd.ft. growth)	=	40.6 "
5	7,604 acres x (5336 bd.ft. + 85 bd.f.t growth)	=	41.2 "
6	7,604 acres x (5421 bd.ft. + 85 bd.ft. growth)	=	41.9 "
7	7,604 acres x (5506 bd.ft. + 85 bd.ft. growth)	=	42.5 "
8	7,604 acres x (5591 bd.ft. + 85 bd.ft. growth)	=	43.2 "
9	7,604 acres x (5676 bd.ft. + 85 bd.ft. growth)	=	43.8 "
10	7,604 acres x (5761 bd.ft. + 85 bd.ft. growth)	=	44.5 "
	Total for 10 years	=	415.5 MMbf

912,500 acres - (7,604 acres x 20 years regeneration cut) and - 78,850 nonstocked and 0-20 year age class = 681,570 acres, to receive intermediate cut in 20 years, or 34078 acres per year.

912,500 acres - (7604 acres x 20 years regeneration cut) - 78,850 acres nonstocked and 0-20 age class = 681,570 acres to receive intermediate cut in 20 years or 34,078 acres per year. Assume average intermediate cut first year of 1,500 bd.ft. per acre and growth of 125 bd. ft. per acre per year in the stands to have intermediate cuts.

Year						
1	34,078 acres x	1500 bd.ft.			=	51.1 MMbf
2	34,078 acres x	(1500 bd.ft.	+	125 bd.ft. growth)	=	55.4 "
3	34,078 acres x	(1625 bd.ft.	+	125 bd.ft. growth)	=	59.6 "
4	34,078 acres x	(1750 bd.ft.	+	125 bd.ft. growth)	=	63.9 "
5	34,078 acres x	(1875 bd.ft.	+	125 bd.ft. growth)	=	68.2 "
6	34,078 acres x	(2000 bd.ft.	+	125 bd.ft. growth)	=	72.4 "
7	34,078 acres x	(2125 bd.ft.	+	125 bd.ft. growth)	=	76.7 "
8	34,078 acres x	(2250 bd.ft.	+	125 bd.ft. growth)	=	80.9 "
9	34,078 acres x	(2375 bd.ft.	+	125 bd.ft. growth)	=	85.2 "
10	34,078 acres x	(2500 bd.ft.	+	125 bd.ft. growth)	=	89.5 "
				Total for 10 years =		702.9 MMbf

Yield of Other Products (5.0" - 8.9" DBH)

The inventory of cubic volume in trees from 5.0" to 8.9" DBH is 194,362 M cubic feet.

Assume possible cutting of one-half of the inventory of this material in one 20-year cutting cycle, or one-fourth in a 10-year period = 48,590 M cubic feet or 485.9 M cunits or 592.6 M cords.

Total Possible Potential Yield for First Decade

Regeneration Cuts	415.5 MMbf
Intermediate Cuts	702.9 MMbf
Total Sawtimber Yield	1,118.4 MMbf or 2,986.1 M cunits

Total Products Yield 592.6 M cords or 485.9 M cunits

The timber production potential calculated in this section is based on intensive management of all productive forest land for timber production without constraints, except for maintenance of the sustained yield.

BASE MAP

A base map is in an envelope in the back of this plan. The map shows the timbered land on the Forest by the different components.

ACTION PLAN

Compartment Examination and Silvicultural Prescription

Compartment examinations are to be made and silvicultural prescriptions written on a schedule which will provide for examination of all productive forest land in the Standard and Special Components every 10 years. In order to accomplish this, 43,340 acres must be examined each year. For this plan period the following minimum targets will be scheduled for examination per year by Ranger District:

Coyote	11,000 acres
Cuba	10,300 "
Jemez	8,800 "
Las Vegas	1,300 "
Pecos	4,300 "
Tesuque	3,500 "
Espanola	4,200 "

Priorities for areas to be examined are as follows:

1. Areas planned for a timber sale within 5 years.

2. Areas of major salvage potential.

3. Areas suitable for commercial thinning.

4. High priority P&M reforestation and timber stand improvement areas.

5. Cutover areas planned for KV reforestation and timber stand improvement.

Programmed Allowable Harvest

The full sawtimber potential yield of 41.0 MMBF per year from the Standard and Special Components will be programmed for harvest. Sales will be scheduled and harvests made on all seven Ranger Districts during this plan period. The sale program for fiscal years 1976 and 1977 are shown in the following table. The sale program for fiscal years 1978 and 1979 will be added to this schedule after public review prior to the end of fiscal year 1977.

SANTA FE NATIONAL FOREST SALE PROGRAM

VOLUMES MMBF

DISTRICT	FY 1976 SALE	VOLUME	FY 1977 SALE	VOLUME
Coyote	Gurule	12.0	Mesa Alta	12.0
Cuba	Poso	10.0	Gallina	10.0
Jemez	Rivera	8.0	Cerro del Pino	8.0
Las Vegas	Sapello	3.0	Calf Canyon	3.0
Pecos	(Small Sales)		(Small Sales)	
Tesuque	Apache	2.0	Sanchez	3.0
Espanola	Chicoma,Sawyer	3.0	Valle	3.0
(All Districts)	(Small Sales)	3.0	(Small Sales)	3.1
Total		41.0		42.1

TIMBER STAND IMPROVEMENT

An estimated 75,000 acres of productive forest lands are overstocked with young trees and in need of precommercial thinning. For the period of this plan a minimum of 6,000 acres per year of this backlog will be planned for thinning. All Site I and II timber stands which need precommercial thinning and which occur within timber sale areas will be planned for thinning with Sale Area Betterment (KV) funds following the timber harvest. Other areas needing thinning will be planned for thinning with appropriated funds. For this plan period the following minimum targets will be scheduled for thinning per Ranger District:

District	Acres per Year
Coyote	1400
Cuba	1400
Jemez	1800
Las Vegas	400
Pecos	400
Tesuque	300
Espanola	300
Total	6,000

Reforestation

The Forest has an estimated 12,240 acres of productive forest land in need of reforestation. This area is largely in lands which were burned over by large wildfires in 1971. The reforestation plan for fiscal years 1976 and 1977 is listed below. The plan for fiscal years 1978 and 1979 will be developed and added to the schedule prior to the end of fiscal year 1977.

Fiscal Year	District	Area	Acres	Funds	Method
1976	Coyote	Cerro Valdez	135	KV	Planting Seedlings
	Cuba	American Creek	40	P&M	" "
	Jemez	Cebollita Burn	250	P&M	" "
	Jemez	Cebollita Burn	350	KV	" "
	Las Vegas	Cat Burn	150	KV	" "
	Pecos	Cat Burn	415	KV	" "
	Tesuque	Tesuque	65	P&M	" "
	Tesuque	Peralta	60	KV	" "
	Espanola	Mesa del Medio	40	KV	" "
		Annual Total	1505		
1977	Coyote	Cerro Valdez	100	KV	" "
	Cuba	American Creek	40	P&M	" "
	Jemez	Cebollita Burn	600	P&M	" "
	Las Vegas	Cat Burn	150	P&M	" "
	Pecos	Cat Burn	400	P&M	" "
	Tesuque	Tesuque	40	P&M	" "
	Espanola	Mesa del Medio	40	KV	" "
		Annual Total	1370		

*KV - Funds collected as part of payment for timber under the Knudsen-Vandenburg Act for reforestation or timber stand improvement purposes.

**P&M- Funds appropriated by Congress for protection and maintenance work in the National Forests.

Road Development

Timber sale areas planned for harvest in this plan period have mostly been cut over one or more times in the past, with the most recent cutting occuring approximately 20 years ago. Road development in proposed sale areas will involve construction or reconstruction of approximately 65 miles of permanent system roads and construction or reconstruction of 600 miles of temporary logging roads which will be closed and drained following timber harvest.

Marginal Component Potential Yield

The Forest includes 317,500 acres of productive forest which is classified as Marginal Component because of fragile soils, excessively steep slopes, low product values, or high development costs. The potential yield from this component is 46,100 M board feet per year of softwood sawtimber plus 2,100 M board feet per year of aspen. No sales in this component are scheduled for this plan period, but as improved harvesting equipment and techniques which provide sufficient protection to soils and other resource values come into use in this area, timber on parts of this component may be harvested.

SLASH DISPOSAL ACTION PLAN

Treatment of slash on the Santa Fe National Forest has heretofore not been successful in avoiding a buildup in fuel loading and fire hazard. Slash treatment has been limited to lopping in most timber harvest and thinning areas, with some piling and burning in roadside zones and fuelbreak areas. As a result fuel loading has been built up over large areas to higher than acceptable levels.

Slash generated in the standard component will be treated to comply with fire management pre-attack plans. As a minimum all slash will be lopped so as to place it within 36 inches of ground level. In addition fuelbreaks will be constructed in strategic locations to break up large continuous areas of slash, and slash will be disposed of in areas of excessive slash concentration, mostly by piling and burning. Prescribed burning to reduce the concentration of small fuels will be planned and accomplished in specified areas where such treatment is appropriate.

In the special component slash treatment will be planned and accomplished in keeping with the management direction for the specific management unit or zone involved. Treatment will include removal from the area, chipping, piling and burning, and other measures which are appropriate for the specific area.

APPENDIX

LIST OF TABLES

Table	Description
1.	Santa Fe National Forest - Type Distribution
2.	Santa Fe National Forest - Age Class Distribution Accessible Softwood Acres
3.	Santa Fe National Forest - Acres by Site Class
4.	Santa Fe National Forest - Accessible Softwood Volume by Age Class (Board Foot Scribner)
5.	Santa Fe National Forest - Accessible Softwood Volume by Age Class (Cubic Foot)
6.	Santa Fe National Forest - Annual Growth by Age Class (Board Foot, Scribner)
7.	Santa Fe National Forest - Annual Growth by Age Class (Cubic Foot)
8.	Control Record Form 1 - Record of Timber Sell
9.	Control Record Form 2 - Record of Regeneration Acres Started
10.	Control Record Form 3 - Record of Regeneration Acres Established
11.	Control Record Form 4 - Record of Timber Stand Improvement Work

Note - A separate packet of 165 statistical tables derived from the timber inventory is located in the Supervisor's Office and each Ranger District in conjunction with this plan.

TABLE 1

SANTA FE NATIONAL FOREST

TYPE DISTRIBUTION

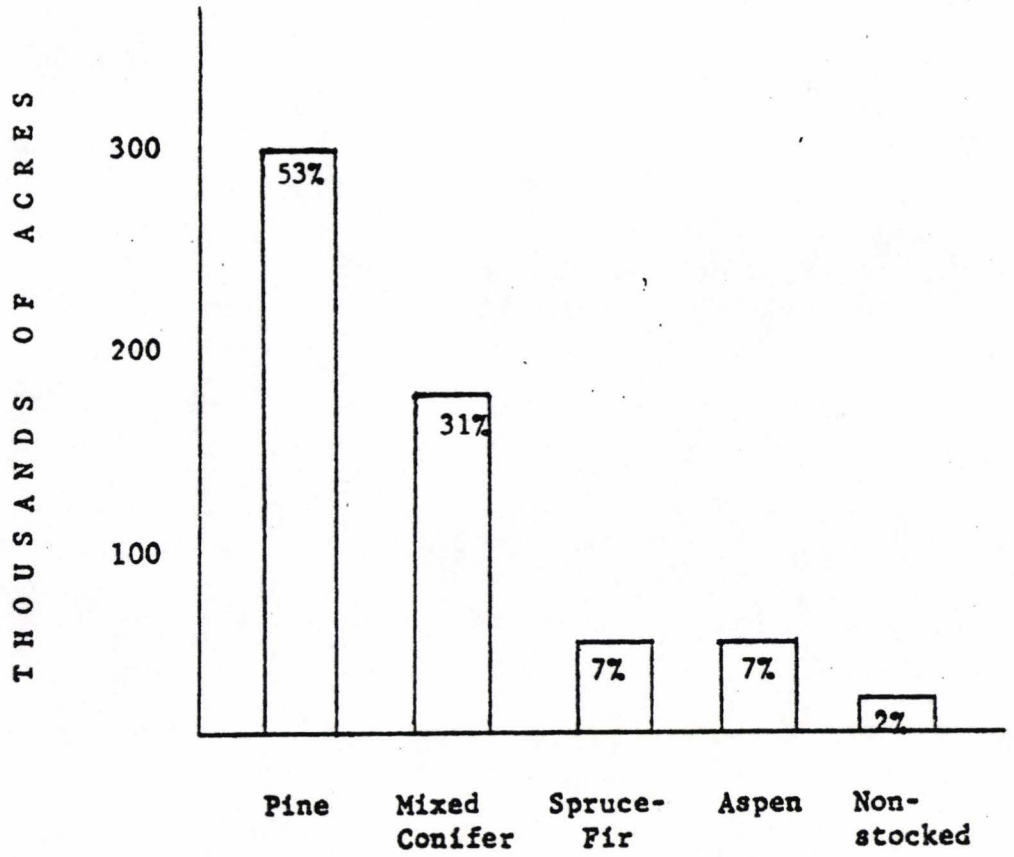
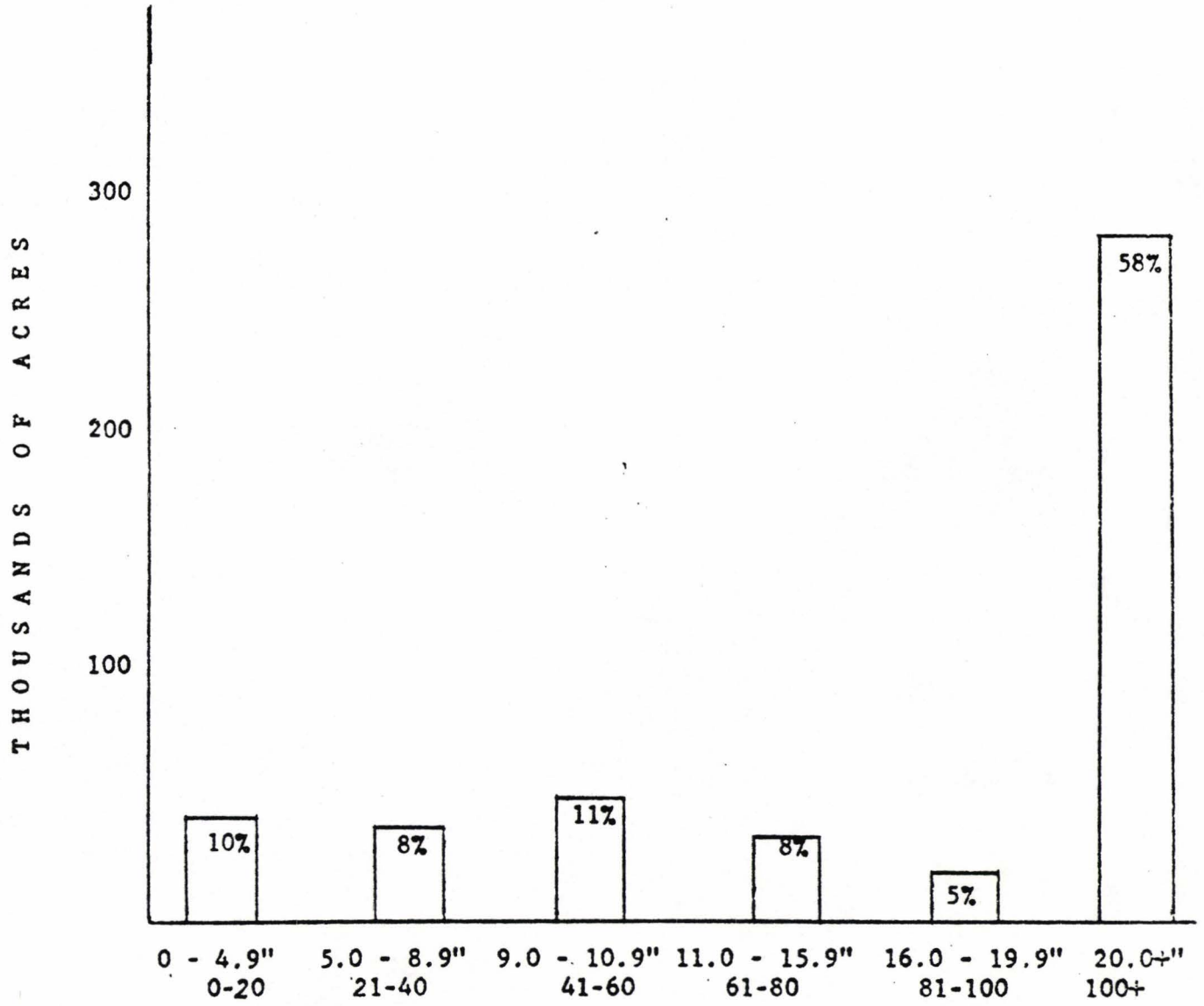


TABLE 2

SANTA FE NATIONAL FOREST

AGE CLASS DISTRIBUTION

ACCESIBLE SOFTWOOD ACRES



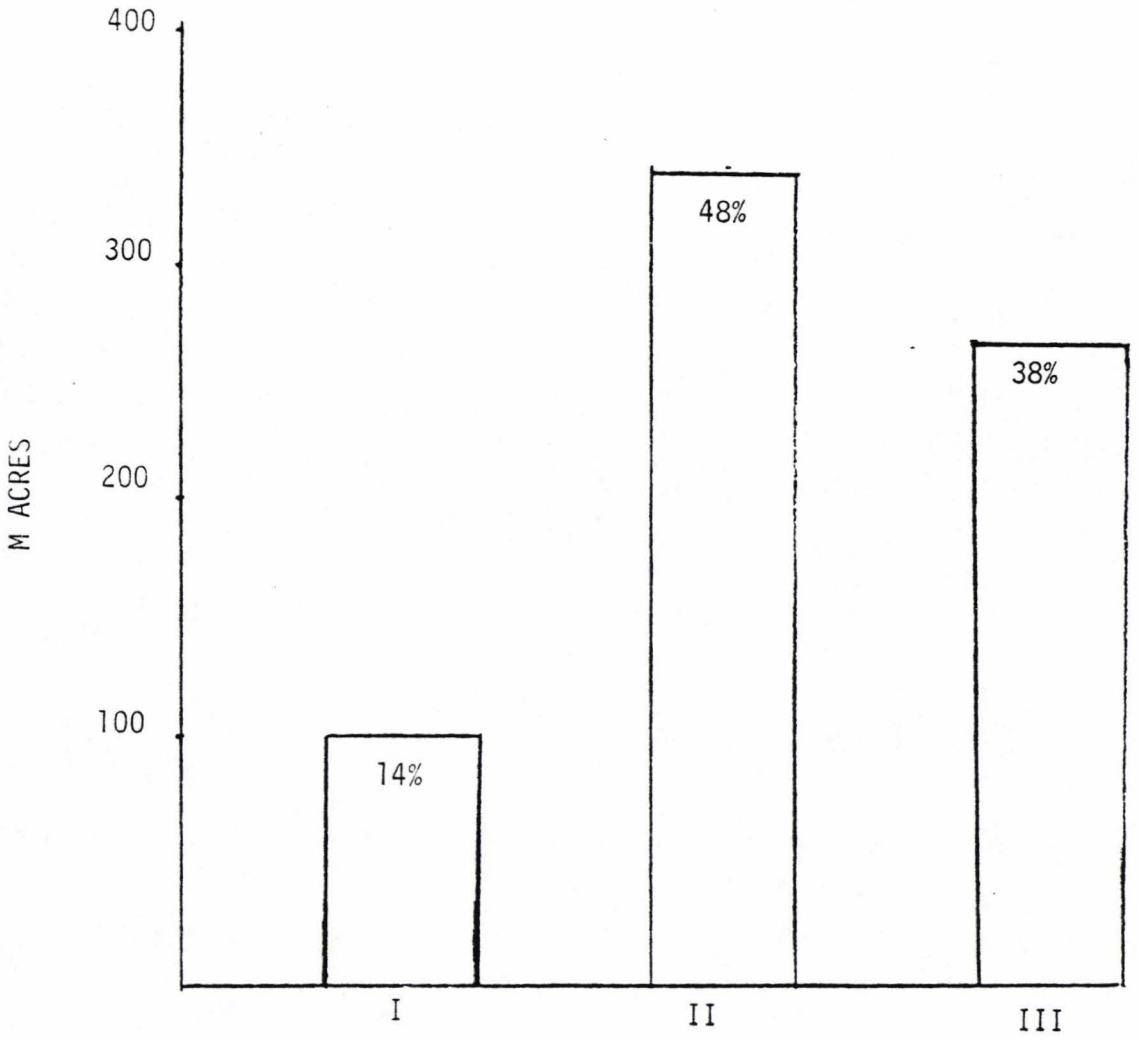
Size Class - Management Age Class

TABLE 3

SANTA FE NATIONAL FOREST

ACRES BY SITE CLASS

ALL COMMERCIAL FOREST ACRES



Site Class

I = Site Index 75+
II = Site Index 55-74
III = Site Index below 55

TABLE 4

SANTA FE NATIONAL FOREST

Accessible Softwood Volume by Age Class
Board Foot Scribner Volume

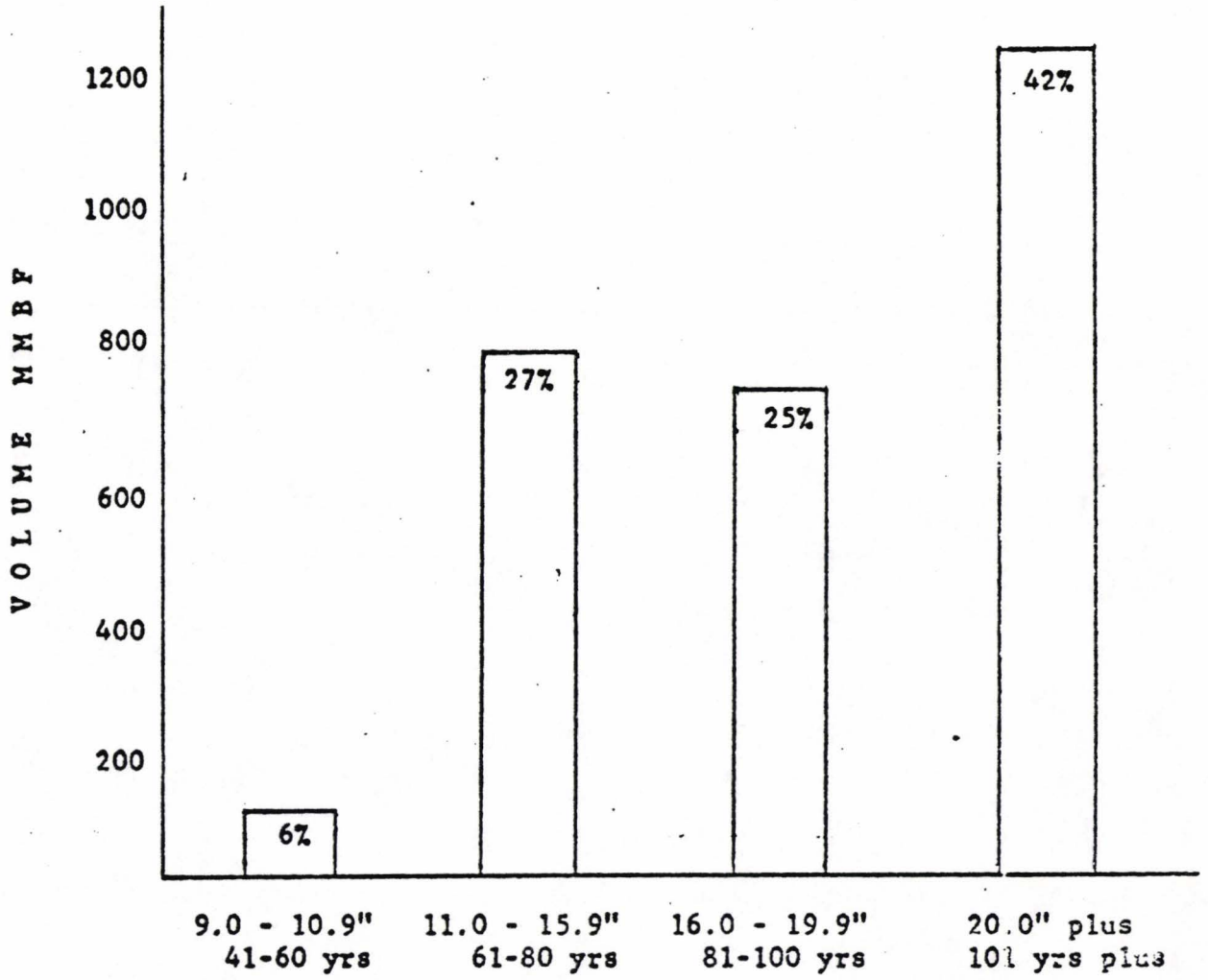


TABLE 5

SANTA FE NATIONAL FOREST

ACCESSIBLE SOFTWOOD VOLUME BY AGE CLASS
CUBIC FOOT VOLUME

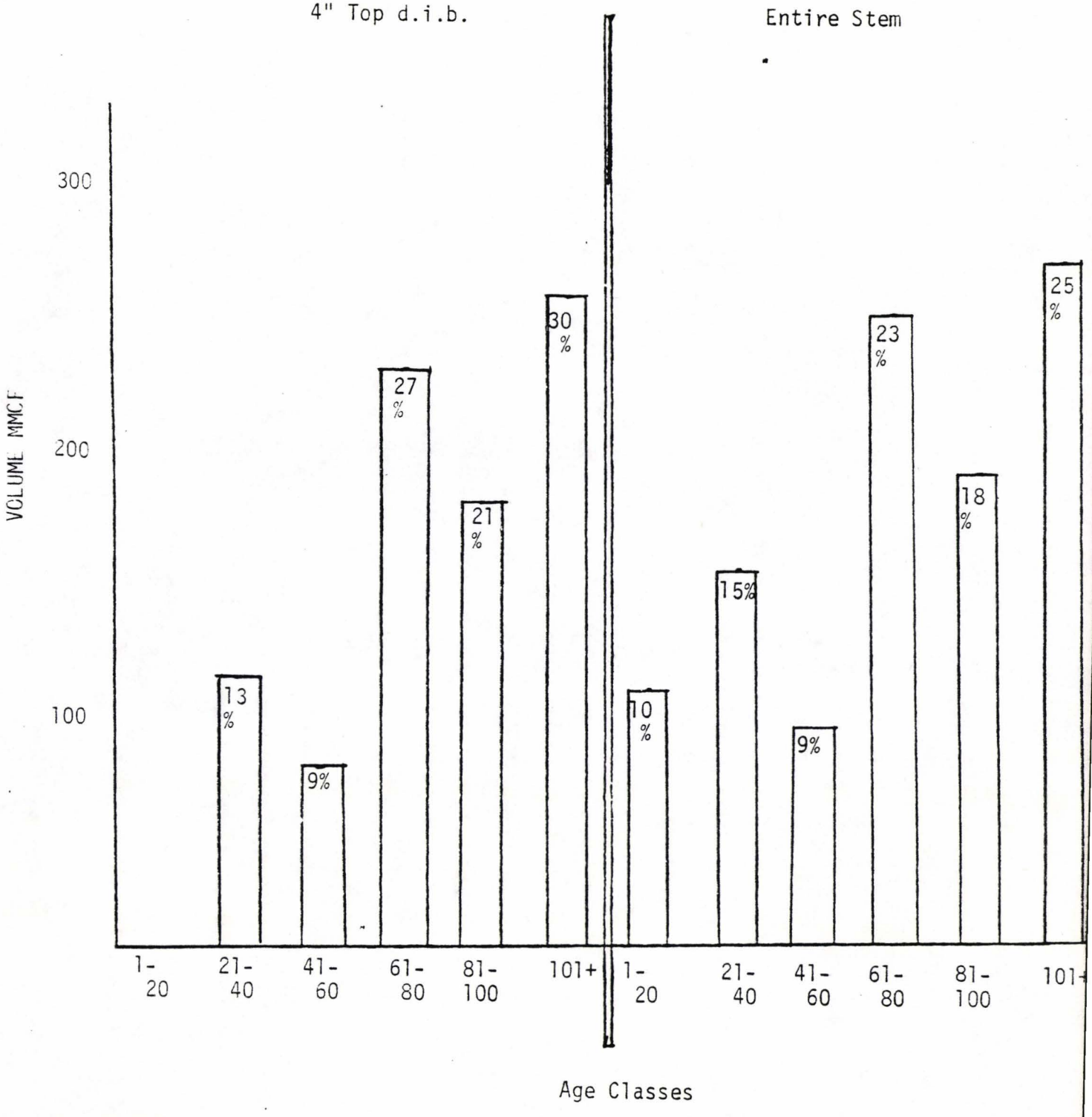


TABLE 6

SANTA FE NATIONAL FOREST

AGE CLASS DISTRIBUTION

ANNUAL GROWTH BY AGE CLASS

ACCESSIBLE SOFTWOOD AREAS

BOARD FOOT SCRIBNER VOLUME

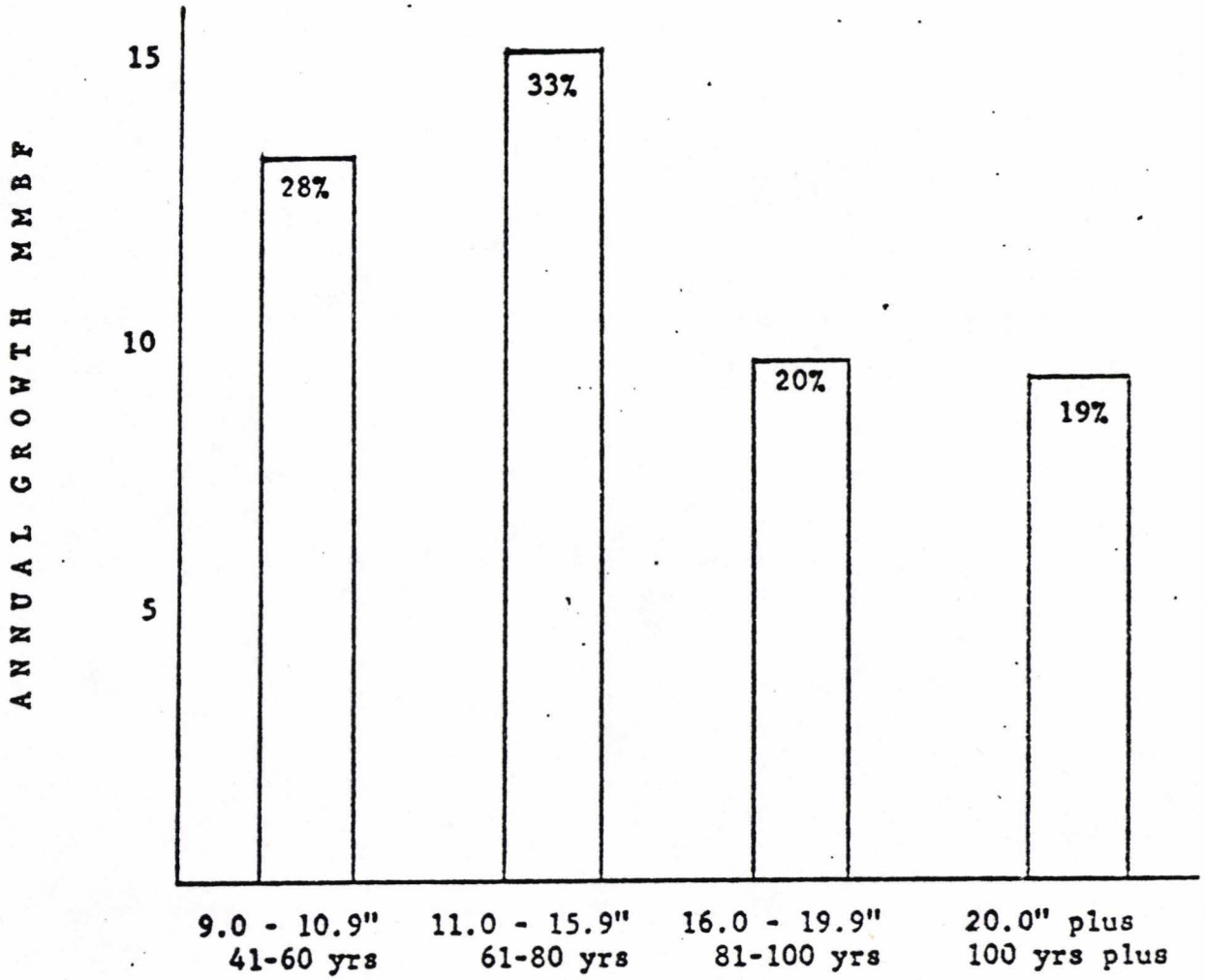


TABLE 7

SANTA FE NATIONAL FOREST

ANNUAL GROWTH BY AGE CLASS

ACCESSIBLE SOFTWOOD AREAS

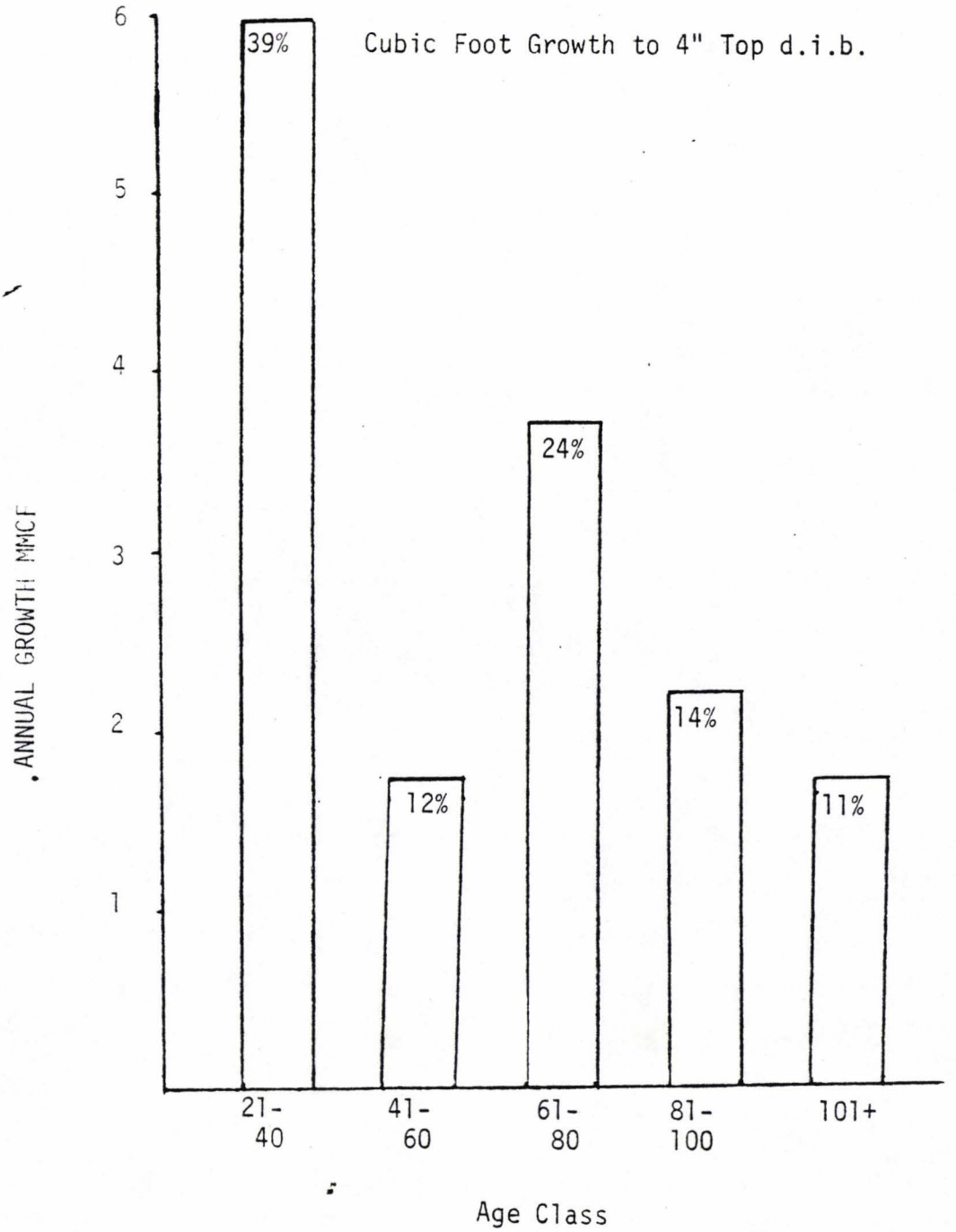


TABLE 8

CONTROL RECORD FORM 1

RECORD OF TIMBER SELL _____ Ranger District

Fiscal Year	Compartment Numbers	Standard Component			Special Component			Marginal Component			Unregulated Component		
		Acres	MMBF	M Cunits	Acres	MMBF	M Cunits	Acres	MMBF	M Cunits	Acres	MMBF	M Cunits

Instructions - Post form and send copy to S.O. annually by July 15; Retain original in Ranger District copy of Management Plan

TABLE 9

CONTROL RECORD FORM 2

RECORD OF REGENERATION ACRES STARTED _____ Ranger District

Fiscal Year	Compartment Numbers	Standard Component			Special Component			Marginal Component			Unregulated Component		
		Reg. Cut	Plant	Site Prep.	Reg. Cut	Plant	Site Prep.	Reg. Cut	Plant	Site Reg.	Reg. Cut	Plant	Site Prep.

Instructions - Post acres when regeneration is initiated by regeneration cutting, planting, or site preparation for natural regeneration. If regeneration cut is a removal cut of an overstory over a stocked 1-20 age class, post acres here and also in Control Record Form 3. Send copy to S.O. annually by July 15, retain original in District copy of Management Plan.

TABLE 10

CONTROL RECORD FORM 3

RECORD OF REGENERATION ACRES ESTABLISHED _____ Ranger District

Fiscal Year	Compartment Numbers	Standard Component		Special Component		Marginal Component		Unregulated Component	
		Acres	Cumulative Acres	Acres	Cumulative Acres	Acres	Cumulative Acres	Acres	Cumulative Acres

Instructions - Post when regeneration is established based on regeneration survey of trees at least 5 years old. Submit copy to S.O. annually by July 15, retain original in District copy of Management Plan. Begin cumulative acres in FY 1975.

TABLE 11

CONTROL RECORD FORM 4

RECORD OF TIMBER STAND IMPROVEMENT WORK _____ RANGER DISTRICT

Fiscal Year	Compartment Numbers	Standard Component			Special Component			Marginal Component			Unregulated Component		
		Thinning	Release	Other	Thinning	Release	Other	Thinning	Release	Other	Thinning	Release	Other
(Cumulative)													
(Cumulative)													
(Cumulative)													
(Cumulative)													
(Cumulative)													

Instructions - Post accomplished acres for each year and also cumulative totals on a separate line. Begin cumulative acres with FY 1975. Submit copy to S.O. annually by July 15, retain original in District copy of Management Plan.

U. S. DEPARTMENT OF AGRICULTURE
FOREST SERVICE
RICHARD E. MC ARDLE, CHIEF

WHITE RIVER NATIONAL FOREST

COLORADO

SIXTH PRINCIPAL MERIDIAN
1959

Scale 1/4 0 1 2 3 4 Miles

COMPARTMENT MAP—
HOLY CROSS AND WHITE RIVER WORKING CIRCLES

Nov. 59 revision of NR 3/57 map

LEGEND

- Compartment Boundary
- Block Boundary
- Working Circle Bndry.

LEGEND

- National Forest boundary
- Adjacent National Forest boundary
- Highway, hard surface
- Good motor road, graded gravel
- Motorway, improved dirt
- Poor motorway, unimproved dirt
- Trail
- Railroad
- Power line
- Telephone line
- Municipal and other airports
- U.S. Highway route
- State Highway route
- County route
- Forest route
- Mine
- Airway beacon
- Supervisor's Headquarters
- District ranger station (Report fires here)
- Guard or ranger station (Not permanently occupied)
- Fire look out
- Fire look out cache
- Permanent lookout station
- Improved forest campground C.G.
- or picnic ground P.G.
- House, cabin or other building
- Triangulation station
- Schoolhouse
- Sawmill
- Corral
- Wilderness areas (100,000 acres or more)
- Wild area (Less than 100,000 acres)
- Natural and Primitive areas
- Cave
- National Forest land

COMPARTMENT ITEM CODE LIST

1 - Holy Cross Working Circle

001 Castle Creek
002 Milk Creek
003 Sheephorn
004 Three Licks
005 Box Canyon
006 Bear Gulch
007 North Fork
008 Meadow Creek
009 Piney Lake
010 South Fork
011 Rock Creek
012 Cache Creek
013 Avon
014 Spring Creek
015 Mucky Lake
016 Hardscrabble
017 First Creek
018 Antones Gulch
019 West Brush Creek
020 Rat Creek
021 East Brush Creek
022 Ieland Creek
023 Bruce Creek
024 Salt Creek
025 Squaw Creek
026 West Lake Creek
027 East Lake Creek
028 Beaver Creek
029 Stone Creek
030 Whiskey Creek
031 Grouse Creek
032 Martin Creek
033 Cross Creek
034 Fall Creek
035 Peterson Gulch
036 Girard
037 Homestake
038 Yoder Gulch
039 Rule Creek
040 Dennett Creek
041 Mitchell Creek
042 Piney Gulch
043 Eagle River
044 Taylor-Fiddler
045 Jones Gulch
046 Isabell
047 Cataract Creek
048 Elk Creek
049 Silver Creek
050 Hornsilver Mtn.
051 Tate Gulch West
052 Tate Gulch East
053 Lower Wearyman
054 Upper Wearyman
055 Turkey Creek
056 Lime Creek
057 Willow Creek
058 Two Elk Creek
059 Game Creek
060 Mill Creek
061 Timber Creek
060 Black Gore Creek
063 Main Gore Creek
064 Deluge Creek
065 Bighorn Creek
066 Pitkin Creek
067 Booth Creek
068 Booth Garden
069 Middle Creek
070 Red Sandstone
071 Buffer Creek
072 Traer Creek
073 Dickson Creek
074 Cottonwood
075 Cattle Creek
076 Basalt Mtn.
077 Seven Castles
078 Taylor
079 Hyrup
080 Downey
081 Fuedi
082 Smith
083 Mt. Thomas
084 Spring Creek
085 Line Creek
086 Last Chance
087 North Fork
088 Norrie
089 Ivanhoe
090 Frying Pan
091 Granite-Marten
092 South Fork
093 Chapman
094 Deeds
095 Deadman
096 Miller
097 Rocky Fork
098 Sloans Peak
099 West Sopris
100 East Sopris
101 Capitol Creek
102 Elk Creek
103 Snowmass
104 East Snowmass
105 Brush Creek
106 Owl Creek
107 Willow Creek
108 Maroon Lake
109 East Maroon
110 Maroon Creek
111 Conundrum
112 Ashcroft
113 Castle
114 Difficult
115 New York
116 Lincoln
117 Independence
118 Lost Man
119 Green Mtn.
120 Grottos
121 Hunter
122 Smuggler
123 Red Mtn.
124 Lenado
125 Spruce Creek
126 Woody
127 Collins Creek
128 Little Woody
129 Red Canyon
130 Arbaney
131 Wheatley
132 Four Mile
133 Thompson Creek
134 Coal Creek
135 Hays Gulch
136 Ferham Creek
137 Prince Creek
138 Avalanche Creek
139 East Creek
140 Lost Trail
141 Yule Creek
142 Crystal
143 Wallace Creek
144 Battlement Creek
145 Cache Creek
146 Hunter-Beaver
147 Man Creek
148 West Divide Creek
149 East Divide Creek

2 - White River Working Circle

001 Sunnyside
002 Cedar Creek
003 Cabin Creek
004 North Derby
005 Middle Derby
006 South Derby
007 Derby Mesa
008 Red Dirt
009 Turret Creek
010 Sweetwater
011 Dry Sweetwater
012 Lake Creek
013 Coburn Country
014 Deep Creek
015 Coffee Pot
016 ReName
017 Grizzly Creek
018 Dead Horse
019 Grand Mesa
020 Mormpos Creek
021 Milk Creek
022 Coal Creek
023 Beaver Creek
024 Fawn Creek
025 Lost Creek
026 Snell Creek
027 Parmalee Creek
028 Trappers Lake
029 Marvine
030 Ute Creek
031 Fowler Peak
032 Lost Solar
033 Upper South Fork
034 Lower South Fork
035 Burro Mtn.
036 North Elk
037 Miller Creek
038 Flag Creek
039 Rifle Creek
040 West Elk Creek
041 Meadow Creek
042 Clinetop Mesa
043 East Elk Creek
044 Boller Creek
045 Canyon Creek
046 Transfer Spring

LEGEND

- Compartments in which Cutting of Live Timber will be Done During Ten Year Planning Period. FY 1963 - 1972
- Compartments in which Cutting of Dead Timber will be Done During Ten Year Planning Period.
- (Rd Nr.) Roads to be Constructed During Ten Year Period.

FOREST SERVICE MAP CLASS - A

Compiled and drawn at Regional Office, Denver, Colo. - 1958
from Forest Service planimetric maps and U.S.G.S. topographic maps constructed by photogrammetric methods from aerial photographs.
Control by U.S. Coast and Geodetic & U.S. Geological Surveys.

WHITE RIVER W.C. (2)
HOLY CROSS W.C. (1)
WHITE RIVER BLOCK
EAGLE RIVER BLOCK
DOTSERO BLOCK
CLINETOP BLOCK
FRYING PAN RIVER BLOCK
DIVIDE BLOCK
CRYSTAL RIVER BLOCK
ROARING FORK BLOCK